



Economic Commission for Europe**Inland Transport Committee****Working Party on the Transport of Dangerous Goods****115th session**

Geneva, 2-5 April 2024

Item 5 (a) of the provisional agenda

**Proposals for amendments to annexes A and B of ADR:
construction and approval of vehicles****Battery Electric Vehicles and Hydrogen Fuelled Vehicles****Transmitted by the Government of the Netherlands on behalf
of the IWG-Electrified Vehicles*****Introduction**

1. The proposals for amendment in document ECE/TRANS/WP.15/2023/14 were preliminary adopted with modifications. The amendments to ADR 2023 can be found in Annex III in the report ECE/TRANS/WP.15/264 of the 114th session of WP.15.
2. The amendments contained a number of wordings that were kept in square brackets for further consideration at the 115th session of WP.15. In section 1 of this document final proposals and justifications are given how to deal with the wording in square brackets.
3. Further additional consequential amendments were found which are reproduced in section 2 of this document.
4. In a section 3 a proposal is contained based on document INF.10 of the 114th session of WP.15 and paragraph 41 of the report ECE/TRANS/WP.15/264 to link the table to the application or prohibition on the application of the electric power train for EX vehicles and trailers.
5. This document contains the proposals as available at the moment of the deadline for official documents. As development is still ongoing this document will be supplemented by a report of the IWG-EV and if necessary minor additions or adjustments.

Proposals

* A/77/6 (Sect. 20), table 20.6



6. Section 1Text in square brackets

Subsection	Text of Annex III to ECE/TRANS/WP.15/264	Proposal and Justification
1.6.5.26	Vehicles first registered (or which entered into service if registration is not mandatory) before [1 April 2026], approved as AT vehicle not in compliance with the provisions of 9.2.4.2 concerning fuel tanks may continue to be used.”	The date of 1 April 2026 is the standard period to allow for UN Regl. No. 105 to be updated and vehicles already under construction (e.g. fitting of tank) to be completed. It is proposed to delete the square brackets.
1.6.5.27	Vehicles first registered (or which entered into service if registration is not mandatory) before [1 April 2026], approved as AT vehicle not in compliance with the provisions of 9.2.4.4.2 concerning the evaluation of the REESS may continue to be used.”	The date of 1 April 2026 is the standard period to allow for UN Regl. No. 105 to be updated and vehicles already under construction (e.g. fitting of tank) to be completed. It is proposed to delete the square brackets.
9.2.1.1	In the row for 9.2.4.2 in the table: <ul style="list-style-type: none"> in the column for “AT”, add “X^k” and in column “COMMENTS”, add “^k Applicable to motor vehicles “<u>using other fuels than hydrogen.</u>” first registered after [31 March 2026]”. 	The hydrogen container is the most critical part of the system. Hydrogen containers shall comply from the entry into force of ADR 2025. However, as a consequence tanks and cylinders for other fuels on “AT” vehicles that are already allowed need a lead time to comply. See also 1.6.5.26 for existing “AT” vehicles. It is proposed to delete the square brackets.
9.2.1.1	In the row for 9.2.4.4.2 in the table: <ul style="list-style-type: none"> in the column for “AT”, add “X^k” and in column “COMMENTS”, add “^k Applicable to motor vehicles first registered after [31 March 2026]”. 	Also “AT” vehicles should benefit from a safe design and construction of the REESS. Battery Electric Vehicles for “AT” are already allowed and need a lead time to comply. Also see 1.6.5.27 for existing vehicles. It is proposed to delete the square brackets.
9.2.2.1	[In the first paragraph, after “ignition”, add “, fire”.] delete “fire”	It was felt that ignition already covered the development of a fire! It is proposed to delete “fire” and the square brackets.
9.2.4.3	(e) Fuel tanks and cylinders for hydrogen shall meet the relevant requirements of UN Regulation No. 134 ⁹ , as amended at least by the 02 series of amendments, or for liquid hydrogen containers the technical provisions of [Global Technical Regulation No.13 ¹⁰ , Phase 2, part 7].”	After checking the proper reference would be “ <i>Global Technical Regulation Amendment 1, part 7</i> ”. Part 7 is specific for the liquid hydrogen container. It is proposed to amend the wording and delete the square brackets.
9.2.4.3.1) UN Regulation No. 134 ⁹ for compressed hydrogen [and the technical provisions of Global Technical Regulation No.13 ¹⁰ , Phase 2] for liquid hydrogen, as relevant.	After checking the proper reference would be “ <i>Global Technical Regulation Amendment 1</i> ”. It is proposed to amend the wording and delete the square brackets.

9.2.4.4.2	REESS of vehicles with an electric power train shall be designed and constructed taking into account a risk evaluation according to ISO 6469-1:2019/Amd 1:2022 to establish safety for normal operational conditions. [A review shall be carried out by a technical service (e.g. technical service for vehicle approvals according to UN Regulation No. 100 ¹ , as amended at least by the 03 series of amendments).]	The purpose of the text in square brackets is that a an independent body with proper qualifications evaluates the work done by the manufacturer. However, if this should be the technical service for UN Regl. No. 105 or UN Regl. No. 100 was questioned. At the time of drafting this document no consensus was reached on this issue. It is proposed to keep in square brackets to be finalized at the 115 th session of WP.15.
9.2.4.4.3	REESS containing cells for which thermal propagation cannot be guaranteed to be contained within the REESS, measures shall be taken to prevent danger to the load by heating or ignition. [The design shall consider the need for facilitation of intervention by emergency services to mitigate effects of a thermal propagation.]”	The intention of the text in square brackets was to design a vehicle in such a way to make it possible for emergency services to intervene in a fire extended outside the REESS. However, it was felt that when a fire moved from the REES to the whole vehicle the plan of attack of emergency services would not differ between an ICE truck or Electric one. It was therefore deemed unnecessary for the vehicle to be designed in such a way as to allow for this intervention. Another argument for 9.2 is that it is not always known how the superstructure will be fitted. It is also expected that fire brigades will develop techniques to intervene regardless of the design. It is proposed to delete the sentence in square brackets.
9.2.4.5.2	Hydrogen fuel cell vehicles shall comply with UN Regulation No. 134 ⁹ , as amended at least by the 02 series of amendments. For vehicles using liquid hydrogen the technical requirements of the [Global Technical Regulation No.13 ¹⁰ , Phase 2] applies.	After checking the proper reference would be “ <i>Global Technical Regulation 13 Amendment 1</i> ”. It is proposed to amend the wording and delete the square brackets.
9.2.4.5.3) at a deceleration of [3.25 m·s ⁻² for 0.7 s];	The value is correct (see GRSG-126-02r1.pdf paragraph 5.3.1.1). It is proposed to delete the square brackets.
9.2.4	[After “LNG”, add “and liquid hydrogen”.]	Liquefied gas can be very cold and effect the load tank. LNG and liquid hydrogen will behave in the same way. It is proposed to add “and liquid hydrogen” and delete the square brackets.

7. Section 2

Consequential amendments

Chapter 9.2

- 9.2.5.1 (current 9.2.4.8.1) Replace 9.2.4.8.2 to 9.2.4.8.6" by "9.2.5.2 to 9.2.5.6".
- 9.2.5.2 (current 9.2.4.8.2) Replace "9.2.4.3 and 9.2.4.5" by "9.2.4.2 and 9.2.4.3.2".
- 9.2.5.4 (current 9.2.4.8.4) In the first sentence, replace "9.2.4.8.3 (b) and (c)" by: "9.2.5.3 (b) and (c)".

Chapter 9.3

9.3.2.2 Replace "9.2.4.8.1, 9.2.4.8.2, 9.2.4.8.5 and 9.2.4.8.6" by: "9.2.5.1, 9.2.5.2, 9.2.5.5 and 9.2.5.6".

Chapter 9.7

9.7.7.1 In the first paragraph, replace "9.2.4.8.1, 9.2.4.8.2, 9.2.4.8.5" by: "9.2.5.1, 9.2.5.2, 9.2.5.5".

In the second paragraph, replace "9.2.4.8.3 and 9.2.4.8.4" by: "9.2.5.3 and 9.2.5.4".

Chapter 9.8

9.8.6.1 Replace "9.2.4.8.1, 9.2.4.8.2, 9.2.4.8.5, 9.2.4.8.6" by: "9.2.5.1, 9.2.5.2, 9.2.5.5, 9.2.5.6".

8. Section 3

Amendment to the table of 9.2.1.1 as amended by ECE/TRANS/WP.15/264 Annex III.

Proposal

In the table of 9.2.1.1 in the line for 9.2.4.4 "Electric Power Train" add an "X" in the columns for EX/II, EX/III, AT and FL.

Justification

In 9.2.4.4 contains wording to prohibit the use of battery electric vehicles for the category EX/II and EX/III and prohibits re-generative braking or electric power train on trailers. It is necessary to add these crosses to link the table and body of Chapter 9.2.
